

SEQUENCE LISTING

<110> Adra, Chaker

<120> GRANULOCYTE SUBTYPE-SELECTIVE RECEPTORS AND ION CHANNELS AND USES THEREOF

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<140> Not yet assigned

<141> 2006-09-05

<150> PCT/US2005/007519

<151> 2005-03-03

<150> 60/549,865

<151> 2004-03-03

<160> 31

<170> PatentIn version 3.3

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Leu Trp Gly His Arg Tyr Glu Pro Val Leu Phe Glu Glu Lys His Tyr  
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Thr Pro Leu Cys Ser Ala Arg Asp Leu Ala Glu Lys Lys Tyr Ile Leu  
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Ser Asn Ala Asn Ser Phe Cys Tyr Glu Asn Glu Val Ala Leu Thr Ser  
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Val Tyr Leu Ser Lys Gln Arg Trp Glu His Ile Asp Pro Ser Gly Arg  
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Leu Cys Thr Phe Phe Gly Leu Thr Met Thr Val Phe Gly Leu Ser Ser  
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Leu Phe Ile Ala Ser Ala Met Ala Val Glu Arg Ala Leu Ala Ile Arg  
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Ala Pro His Trp Tyr Ala Ser His Met Lys Thr Arg Ala Thr Arg Ala  
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Val Leu Leu Gly Val Trp Leu Ala Val Leu Ala Phe Ala Leu Leu Pro  
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Val Leu Gly Val Gly Gln Tyr Thr Val Gln Trp Pro Gly Thr Trp Cys  
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Phe Ile Ser Thr Gly Arg Gly Gly Asn Gly Thr Ser Ser Ser His Asn  
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Trp Gly Asn Leu Phe Phe Ala Ser Ala Phe Ala Phe Leu Gly Leu Leu  
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Ala Leu Thr Val Thr Phe Ser Cys Asn Leu Ala Thr Ile Lys Ala Leu  
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Val Ser Arg Cys Arg Ala Lys Ala Thr Ala Ser Gln Ser Ser Ala Gln  
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Trp Gly Arg Ile Thr Thr Glu Thr Ala Ile Gln Leu Met Gly Ile Met  
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Cys Val Leu Ser Val Cys Trp Ser Pro Leu Leu Ile Met Met Leu Lys  
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Val	Leu	Asp	Lys	Val	Cys	Glu	Asn	Lys	Thr	Thr	Val	Val	Ser	Leu	Lys	
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aat	aca	act	gag	agc	ttt	gtc	cct	gtg	ctt	aaa	caa	ata	tcc	acg	tgg	1208
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act	aaa	ttc	acc	aag	gaa	gag	acg	tcc	tcc	ctg	gcc	aca	gtc	ttc	ctg	1256
Thr	Lys	Phe	Thr	Lys	Glu	Glu	Thr	Ser	Ser	Leu	Ala	Thr	Val	Phe	Leu	
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gag	agt	gtg	gaa	agc	atg	aca	ctg	gca	tct	ttt	tgg	aaa	ccc	tca	gca	1304
Glu	Ser	Val	Glu	Ser	Met	Thr	Leu	Ala	Ser	Phe	Trp	Lys	Pro	Ser	Ala	
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Asn	Ile	Thr	Pro	Ala	Val	Arg	Thr	Glu	Tyr	Leu	Asp	Ile	Glu	Ser	Lys	
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Val	Ile	Asn	Lys	Glu	Cys	Ser	Glu	Glu	Asn	Val	Thr	Leu	Asp	Leu	Val	
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gcc	aag	ggg	gat	aag	atg	aag	atc	ggg	tgt	tcc	aca	att	gag	gaa	tct	1448
Ala	Lys	Gly	Asp	Lys	Met	Lys	Ile	Gly	Cys	Ser	Thr	Ile	Glu	Glu	Ser	
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Glu	Ser	Thr	Glu	Thr	Thr	Gly	Val	Ala	Phe	Val	Ser	Phe	Val	Gly	Met	
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Ile Met Thr Gly Glu Lys Lys Asp Gly Phe Ser Asp Pro Ile Ile Tyr	
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Thr Leu Glu Asn Ile Gln Pro Lys Gln Lys Phe Glu Arg Pro Ile Cys	
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Val Ser Trp Ser Thr Asp Val Lys Gly Gly Arg Trp Thr Ser Phe Gly	
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Cys Val Ile Leu Glu Ala Ser Glu Thr Tyr Thr Ile Cys Ser Cys Asn	
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Asp Phe Ser Leu Tyr Ile Ile Ser His Val Gly Ile Ile Ile Ser Leu	
600 605 610	
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Val Cys Leu Val Leu Ala Ile Ala Thr Phe Leu Leu Cys Arg Ser Ile	
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Arg Asn His Asn Thr Tyr Leu His Leu His Leu Cys Val Cys Leu Leu	
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Leu Ala Lys Thr Leu Phe Leu Ala Gly Ile His Lys Thr Asp Asn Lys	
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Cys Phe Phe Trp Met Leu Val Glu Ala Val Ile Leu Phe Leu Met Val	
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Leu His Ile Cys Ala Phe Gly Tyr Gly Leu Pro Met Leu Val Val Val	
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Ile	Asp	Glu	Cys	Ser	Gln	Ser	Pro	Gln	Pro	Cys	Gly	Pro	Asn	Ser	Ser
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Cys	Lys	Asn	Leu	Ser	Gly	Arg	Tyr	Lys	Cys	Ser	Cys	Leu	Asp	Gly	Phe
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Ser	Ser	Pro	Thr	Gly	Asn	Asp	Trp	Val	Pro	Gly	Lys	Pro	Gly	Asn	Phe
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Ser	Cys	Thr	Asp	Ile	Asn	Glu	Cys	Leu	Thr	Ser	Ser	Val	Cys	Pro	Glu
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His	Ser	Asp	Cys	Val	Asn	Ser	Met	Gly	Ser	Tyr	Ser	Cys	Ser	Cys	Gln
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Val	Gly	Phe	Ile	Ser	Arg	Asn	Ser	Thr	Cys	Glu	Asp	Val	Asp	Glu	Cys
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Ala	Asp	Pro	Arg	Ala	Cys	Pro	Glu	His	Ala	Thr	Cys	Asn	Asn	Thr	Val
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Gly	Asn	Tyr	Ser	Cys	Phe	Cys	Asn	Pro	Gly	Phe	Glu	Ser	Ser	Ser	Gly
		195					200					205			
His	Leu	Ser	Phe	Gln	Gly	Leu	Lys	Ala	Ser	Cys	Glu	Asp	Ile	Asp	Glu
	210					215					220				
Cys	Thr	Glu	Met	Cys	Pro	Ile	Asn	Ser	Thr	Cys	Thr	Asn	Thr	Pro	Gly
225					230					235					240

Ser Tyr Phe Cys Thr Cys His Pro Gly Phe Ala Pro Ser Asn Gly Gln  
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Leu Asn Phe Thr Asp Gln Gly Val Glu Cys Arg Asp Ile Asp Glu Cys  
260 265 270

Arg Gln Asp Pro Ser Thr Cys Gly Pro Asn Ser Ile Cys Thr Asn Ala  
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Leu Gly Ser Tyr Ser Cys Gly Cys Ile Ala Gly Phe His Pro Asn Pro  
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Glu Gly Ser Gln Lys Asp Gly Asn Phe Ser Cys Gln Arg Val Leu Phe  
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Lys Cys Lys Glu Asp Val Ile Pro Asp Asn Lys Gln Ile Gln Gln Cys  
325 330 335

Gln Glu Gly Thr Ala Val Lys Pro Ala Tyr Val Ser Phe Cys Ala Gln  
340 345 350

Ile Asn Asn Ile Phe Ser Val Leu Asp Lys Val Cys Glu Asn Lys Thr  
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Thr Val Val Ser Leu Lys Asn Thr Thr Glu Ser Phe Val Pro Val Leu  
370 375 380

Lys Gln Ile Ser Thr Trp Thr Lys Phe Thr Lys Glu Glu Thr Ser Ser  
385 390 395 400

Leu Ala Thr Val Phe Leu Glu Ser Val Glu Ser Met Thr Leu Ala Ser  
405 410 415

Phe Trp Lys Pro Ser Ala Asn Ile Thr Pro Ala Val Arg Thr Glu Tyr  
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Leu Asp Ile Glu Ser Lys Val Ile Asn Lys Glu Cys Ser Glu Glu Asn  
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Val Thr Leu Asp Leu Val Ala Lys Gly Asp Lys Met Lys Ile Gly Cys  
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Ser Thr Ile Glu Glu Ser Glu Ser Thr Glu Thr Thr Gly Val Ala Phe  
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Val Ser Phe Val Gly Met Glu Ser Val Leu Asn Glu Arg Phe Phe Lys  
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Asp His Gln Ala Pro Leu Thr Thr Ser Glu Ile Lys Leu Lys Met Asn  
500 505 510

Ser Arg Val Val Gly Gly Ile Met Thr Gly Glu Lys Lys Asp Gly Phe  
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Ser Asp Pro Ile Ile Tyr Thr Leu Glu Asn Ile Gln Pro Lys Gln Lys  
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Phe Glu Arg Pro Ile Cys Val Ser Trp Ser Thr Asp Val Lys Gly Gly  
545 550 555 560

Arg Trp Thr Ser Phe Gly Cys Val Ile Leu Glu Ala Ser Glu Thr Tyr  
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Thr Ile Cys Ser Cys Asn Gln Met Ala Asn Leu Ala Val Ile Met Ala  
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Ser Gly Glu Leu Thr Met Asp Phe Ser Leu Tyr Ile Ile Ser His Val  
595 600 605

Gly Ile Ile Ile Ser Leu Val Cys Leu Val Leu Ala Ile Ala Thr Phe  
610 615 620

Leu Leu Cys Arg Ser Ile Arg Asn His Asn Thr Tyr Leu His Leu His  
625 630 635 640

Leu Cys Val Cys Leu Leu Leu Ala Lys Thr Leu Phe Leu Ala Gly Ile  
645 650 655

His Lys Thr Asp Asn Lys Met Gly Cys Ala Ile Ile Ala Gly Phe Leu  
660 665 670

His Tyr Leu Phe Leu Ala Cys Phe Phe Trp Met Leu Val Glu Ala Val  
675 680 685

Ile Leu Phe Leu Met Val Arg Asn Leu Lys Val Val Asn Tyr Phe Ser  
690 695 700

Ser Arg Asn Ile Lys Met Leu His Ile Cys Ala Phe Gly Tyr Gly Leu  
705 710 715 720



Pro Met Leu Val Val Val Ile Ser Ala Ser Val Gln Pro Gln Gly Tyr  
725 730 735

Gly Met His Asn Arg Cys Trp Leu Asn Thr Glu Thr Gly Phe Ile Trp  
740 745 750

Ser Phe Leu Gly Pro Val Cys Thr Val Ile Val Ile Asn Ser Leu Leu  
755 760 765

Leu Thr Trp Thr Leu Trp Ile Leu Arg Gln Arg Leu Ser Ser Val Asn  
770 775 780

Ala Glu Val Ser Thr Leu Lys Asp Thr Arg Leu Leu Thr Phe Lys Ala  
785 790 795 800

Phe Ala Gln Leu Phe Ile Leu Gly Cys Ser Trp Val Leu Gly Ile Phe  
805 810 815

Gln Ile Gly Pro Val Ala Gly Val Met Ala Tyr Leu Phe Thr Ile Ile  
820 825 830

Asn Ser Leu Gln Gly Ala Phe Ile Phe Leu Ile His Cys Leu Leu Asn  
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Gly Gln Val Arg Glu Glu Tyr Lys Arg Trp Ile Thr Gly Lys Thr Lys  
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Gln Pro Pro Asp Glu Ser Cys Ser Gln Asn Leu Leu Ile Thr Ser Thr																
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Gln Pro Pro Asp Glu Ser Cys Ser Gln Asn Leu Leu Ile Thr Gln Gln																
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Ile Ile Pro Val Leu Tyr Cys Met Val Phe Ile Ala Gly Ile Leu Leu																
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Asn Gly Val Ser Gly Trp Ile Phe Phe Tyr Val Pro Ser Ser Glu Ser																
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ttc atc atc tat ctc aag aac att gtt att gct gac ttt gtg atg agc																425
Phe Ile Ile Tyr Leu Lys Asn Ile Val Ile Ala Asp Phe Val Met Ser																
60 65 70																
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Leu Thr Phe Pro Phe Lys Ile Leu Gly Asp Ser Gly Leu Gly Pro Trp																
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Tyr Tyr Lys Ile Val Lys Pro Leu Trp Thr Ser Phe Ile Gln Ser Val																
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Ser Tyr Ser Lys Leu Leu Ser Val Ile Val Trp Met Leu Met Leu Leu																
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His Lys Ala Ser Asn Tyr Ile Phe Val Ala Ile Phe Trp Ile Val Phe																
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Leu Leu Leu Ile Val Phe Tyr Thr Ala Ile Thr Lys Lys Ile Phe Lys																
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Phe	Phe	Leu	Cys	Gln	Pro	Phe	Arg	Glu	Ile	Leu	Cys	Lys	Lys	Leu	His		
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Ile	Pro	Leu	Lys	Ala	Gln	Asn	Asp	Leu	Asp	Ile	Ser	Arg	Ile	Lys	Arg		
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Tyr Val Pro Ser Ser Glu Ser Phe Ile Ile Tyr Leu Lys Asn Ile Val  
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Ile Ala Asp Phe Val Met Ser Leu Thr Phe Pro Phe Lys Ile Leu Gly  
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Asp Ser Gly Leu Gly Pro Trp Gln Leu Asn Val Phe Val Cys Arg Val  
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Ser Ala Val Leu Phe Tyr Val Asn Met Tyr Val Ser Ile Val Phe Phe  
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Gly Leu Ile Ser Phe Asp Arg Tyr Tyr Lys Ile Val Lys Pro Leu Trp  
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Thr Ser Phe Ile Gln Ser Val Ser Tyr Ser Lys Leu Leu Ser Val Ile  
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Val Trp Met Leu Met Leu Leu Leu Ala Val Pro Asn Ile Ile Leu Thr  
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Asn Gln Ser Val Arg Glu Val Thr Gln Ile Lys Cys Ile Glu Leu Lys  
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Ser Glu Leu Gly Arg Lys Trp His Lys Ala Ser Asn Tyr Ile Phe Val  
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Ala Ile Phe Trp Ile Val Phe Leu Leu Leu Ile Val Phe Tyr Thr Ala  
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Ile Thr Lys Lys Ile Phe Lys Ser His Leu Lys Ser Ser Arg Asn Ser  
210 215 220

Thr Ser Val Lys Lys Lys Ser Ser Arg Asn Ile Phe Ser Ile Val Phe  
225 230 235 240

Val Phe Phe Val Cys Phe Val Pro Tyr His Ile Ala Arg Ile Pro Tyr  
245 250 255

Thr Lys Ser Gln Thr Glu Ala His Tyr Ser Cys Gln Ser Lys Glu Ile  
260 265 270

Leu Arg Tyr Met Lys Glu Phe Thr Leu Leu Leu Ser Ala Ala Asn Val  
275 280 285

Cys Leu Asp Pro Ile Ile Tyr Phe Phe Leu Cys Gln Pro Phe Arg Glu  
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Ile Leu Cys Lys Lys Leu His Ile Pro Leu Lys Ala Gln Asn Asp Leu  
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Ser	His	Trp	Arg	Pro	Lys	Asp	Val	Val	Val	Val	Ala	Leu	Gly	Leu	Thr	
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gtc	agc	gtg	ctg	gtg	ctg	ctg	acc	aat	ctg	ctg	gtc	ata	gca	gcc	atc	255
Val	Ser	Val	Leu	Val	Leu	Leu	Thr	Asn	Leu	Leu	Val	Ile	Ala	Ala	Ile	
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Ala	Ser	Asn	Arg	Arg	Phe	His	Gln	Pro	Ile	Tyr	Tyr	Leu	Leu	Gly	Asn	
		60					65					70				
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Leu	Ala	Ala	Ala	Asp	Leu	Phe	Ala	Gly	Val	Ala	Tyr	Leu	Phe	Leu	Met	
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ttc	cac	act	ggt	ccc	cgc	aca	gcc	cga	ctt	tca	ctt	gag	ggc	tgg	ttc	399
Phe	His	Thr	Gly	Pro	Arg	Thr	Ala	Arg	Leu	Ser	Leu	Glu	Gly	Trp	Phe	
90					95					100					105	
ctg	cgg	cag	ggc	ttg	ctg	gac	aca	agc	ctc	act	gcg	tcg	gtg	gcc	aca	447
Leu	Arg	Gln	Gly	Leu	Leu	Asp	Thr	Ser	Leu	Thr	Ala	Ser	Val	Ala	Thr	
				110					115					120		
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Leu	Leu	Ala	Ile	Ala	Val	Glu	Arg	His	Arg	Ser	Val	Met	Ala	Val	Gln	
			125					130					135			
ctg	cac	agc	cgc	ctg	ccc	cgt	ggc	cgc	gtg	gtc	atg	ctc	att	gtg	ggc	543
Leu	His	Ser	Arg	Leu	Pro	Arg	Gly	Arg	Val	Val	Met	Leu	Ile	Val	Gly	
		140					145					150				
gtg	tgg	gtg	gct	gcc	ctg	ggc	ctg	ggg	ctg	ctg	cct	gcc	cac	tcc	tgg	591
Val	Trp	Val	Ala	Ala	Leu	Gly	Leu	Gly	Leu	Leu	Pro	Ala	His	Ser	Trp	
	155					160					165					
cac	tgc	ctc	tgt	gcc	ctg	gac	cgc	tgc	tca	cgc	atg	gca	ccc	ctg	ctc	639
His	Cys	Leu	Cys	Ala	Leu	Asp	Arg	Cys	Ser	Arg	Met	Ala	Pro	Leu	Leu	
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Ser	Arg	Ser	Tyr	Leu	Ala	Val	Trp	Ala	Leu	Ser	Ser	Leu	Leu	Val	Phe	
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Leu	Leu	Met	Val	Ala	Val	Tyr	Thr	Arg	Ile	Phe	Phe	Tyr	Val	Arg	Arg	
			205					210					215			
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Arg	Val	Gln	Arg	Met	Ala	Glu	His	Val	Ser	Cys	His	Pro	Arg	Tyr	Arg	
		220					225					230				
gag	acc	acg	ctc	agc	ctg	gtc	aag	act	gtt	gtc	atc	atc	ctg	ggg	gcg	831
Glu	Thr	Thr	Leu	Ser	Leu	Val	Lys	Thr	Val	Val	Ile	Ile	Leu	Gly	Ala	
	235					240					245					
ttc	gtg	gtc	tgc	tgg	aca	cca	ggc	cag	gtg	gta	ctg	ctc	ctg	gat	ggc	879
Phe	Val	Val	Cys	Trp	Thr	Pro	Gly	Gln	Val	Val	Leu	Leu	Leu	Asp	Gly	
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Leu Gly Cys Glu Ser Cys Asn Val Leu Ala Val Glu Lys Tyr Phe Leu	
270 275 280	
ctg ttg gcc gag gcc aac tca ctg gtc aat gct gct gtg tac tct tgc	975
Leu Leu Ala Glu Ala Asn Ser Leu Val Asn Ala Ala Val Tyr Ser Cys	
285 290 295	
cga gat gct gag atg cgc cgc acc ttc cgc cgc ctt ctc tgc tgc gcg	1023
Arg Asp Ala Glu Met Arg Arg Thr Phe Arg Arg Leu Leu Cys Cys Ala	
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tgc ctc cgc cag tcc acc cgc gag tct gtc cac tat aca tcc tct gcc	1071
Cys Leu Arg Gln Ser Thr Arg Glu Ser Val His Tyr Thr Ser Ser Ala	
315 320 325	
cag gga ggt gcc agc act cgc atc atg ctt ccc gag aac ggc cac cca	1119
Gln Gly Gly Ala Ser Thr Arg Ile Met Leu Pro Glu Asn Gly His Pro	
330 335 340 345	
ctg atg act cca ccc ttt agc tac ctt gaa ctt cag cgg tac gcg gca	1167
Leu Met Thr Pro Pro Phe Ser Tyr Leu Glu Leu Gln Arg Tyr Ala Ala	
350 355 360	
agc aac aaa tcc aca gcc cct gat gac ttg tgg gtg ctc ctg gct caa	1215
Ser Asn Lys Ser Thr Ala Pro Asp Asp Leu Trp Val Leu Leu Ala Gln	
365 370 375	
ccc aac caa cag gac tga ctgactggca ggacaaggctc tggcatggca	1263
Pro Asn Gln Gln Asp	
380	
cagcaccact gccaggcctc cccaggcaca ccactctgcc cagggaatgg gggctttggg	1323
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<400> 13

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Tyr Asn Asn Ser Gly Lys Glu Leu Ser Ser His Trp Arg Pro Lys Asp



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Thr	Asn	Leu	Leu	Val	Ile	Ala	Ala	Ile	Ala	Ser	Asn	Arg	Arg	Phe	His
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Gln	Pro	Ile	Tyr	Tyr	Leu	Leu	Gly	Asn	Leu	Ala	Ala	Ala	Asp	Leu	Phe
65					70					75					80
Ala	Gly	Val	Ala	Tyr	Leu	Phe	Leu	Met	Phe	His	Thr	Gly	Pro	Arg	Thr
				85					90					95	
Ala	Arg	Leu	Ser	Leu	Glu	Gly	Trp	Phe	Leu	Arg	Gln	Gly	Leu	Leu	Asp
			100					105					110		
Thr	Ser	Leu	Thr	Ala	Ser	Val	Ala	Thr	Leu	Leu	Ala	Ile	Ala	Val	Glu
		115					120					125			
Arg	His	Arg	Ser	Val	Met	Ala	Val	Gln	Leu	His	Ser	Arg	Leu	Pro	Arg
	130					135					140				
Gly	Arg	Val	Val	Met	Leu	Ile	Val	Gly	Val	Trp	Val	Ala	Ala	Leu	Gly
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Leu	Gly	Leu	Leu	Pro	Ala	His	Ser	Trp	His	Cys	Leu	Cys	Ala	Leu	Asp
				165					170					175	
Arg	Cys	Ser	Arg	Met	Ala	Pro	Leu	Leu	Ser	Arg	Ser	Tyr	Leu	Ala	Val
			180					185					190		
Trp	Ala	Leu	Ser	Ser	Leu	Leu	Val	Phe	Leu	Leu	Met	Val	Ala	Val	Tyr
		195					200					205			
Thr	Arg	Ile	Phe	Phe	Tyr	Val	Arg	Arg	Arg	Val	Gln	Arg	Met	Ala	Glu
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His	Val	Ser	Cys	His	Pro	Arg	Tyr	Arg	Glu	Thr	Thr	Leu	Ser	Leu	Val
225					230					235					240
Lys	Thr	Val	Val	Ile	Ile	Leu	Gly	Ala	Phe	Val	Val	Cys	Trp	Thr	Pro
				245					250					255	
Gly	Gln	Val	Val	Leu	Leu	Leu	Asp	Gly	Leu	Gly	Cys	Glu	Ser	Cys	Asn
			260					265					270		

Val Leu Ala Val Glu Lys Tyr Phe Leu Leu Leu Ala Glu Ala Asn Ser  
275 280 285

Leu Val Asn Ala Ala Val Tyr Ser Cys Arg Asp Ala Glu Met Arg Arg  
290 295 300

Thr Phe Arg Arg Leu Leu Cys Cys Ala Cys Leu Arg Gln Ser Thr Arg  
305 310 315 320

Glu Ser Val His Tyr Thr Ser Ser Ala Gln Gly Gly Ala Ser Thr Arg  
325 330 335

Ile Met Leu Pro Glu Asn Gly His Pro Leu Met Thr Pro Pro Phe Ser  
340 345 350

Tyr Leu Glu Leu Gln Arg Tyr Ala Ala Ser Asn Lys Ser Thr Ala Pro  
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Asp Asp Leu Trp Val Leu Leu Ala Gln Pro Asn Gln Gln Asp  
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1 5 10 15  
  
atc ttc ctc act ggc ctc cct gcc aac ctc ctg gcc ctg cgg gcc ttt 96  
Ile Phe Leu Thr Gly Leu Pro Ala Asn Leu Leu Ala Leu Arg Ala Phe  
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gtg ggg cgg atc cgc cag ccc cag cct gca cct gtg cac atc ctc ctg 144  
Val Gly Arg Ile Arg Gln Pro Gln Pro Ala Pro Val His Ile Leu Leu  
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ctg agc ctg acg ctg gcc gac ctc ctc ctg ctg ctg ctg ctg ccc ttc 192  
Leu Ser Leu Thr Leu Ala Asp Leu Leu Leu Leu Leu Leu Leu Pro Phe  
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aag atc atc gag gct gcg tcg aac ttc cgc tgg tac ctg ccc aag gtc 240  
Lys Ile Ile Glu Ala Ala Ser Asn Phe Arg Trp Tyr Leu Pro Lys Val  
65 70 75 80

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Val	Cys	Ala	Leu	Thr	Ser	Phe	Gly	Phe	Tyr	Ser	Ser	Ile	Tyr	Cys	Ser	
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acg	tgg	ctc	ctg	gcg	ggc	atc	agc	atc	gag	cgc	tac	ctg	gga	gtg	gct	336
Thr	Trp	Leu	Leu	Ala	Gly	Ile	Ser	Ile	Glu	Arg	Tyr	Leu	Gly	Val	Ala	
			100					105					110			
ttc	ccc	gtg	cag	tac	aag	ctc	tcc	cgc	cgg	cct	ctg	tat	gga	gtg	att	384
Phe	Pro	Val	Gln	Tyr	Lys	Leu	Ser	Arg	Arg	Pro	Leu	Tyr	Gly	Val	Ile	
		115					120					125				
gca	gct	ctg	gtg	gcc	tgg	gtt	atg	tcc	ttt	ggc	cac	tgc	acc	atc	gtg	432
Ala	Ala	Leu	Val	Ala	Trp	Val	Met	Ser	Phe	Gly	His	Cys	Thr	Ile	Val	
	130					135					140					
atc	atc	gtt	caa	tac	ttg	aac	acg	act	gag	cag	gtc	aga	agt	ggc	aat	480
Ile	Ile	Val	Gln	Tyr	Leu	Asn	Thr	Thr	Glu	Gln	Val	Arg	Ser	Gly	Asn	
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gaa	att	acc	tgc	tac	gag	aac	ttc	acc	gat	aac	cag	ttg	gac	gtg	gtg	528
Glu	Ile	Thr	Cys	Tyr	Glu	Asn	Phe	Thr	Asp	Asn	Gln	Leu	Asp	Val	Val	
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ctg	ccc	gtg	cgg	ctg	gag	ctg	tgc	ctg	gtg	ctc	ttc	ttc	atc	ccc	atg	576
Leu	Pro	Val	Arg	Leu	Glu	Leu	Cys	Leu	Val	Leu	Phe	Phe	Ile	Pro	Met	
			180					185					190			
gca	gtc	acc	atc	ttc	tgc	tac	tgg	cgt	ttt	gtg	tgg	atc	atg	ctc	tcc	624
Ala	Val	Thr	Ile	Phe	Cys	Tyr	Trp	Arg	Phe	Val	Trp	Ile	Met	Leu	Ser	
		195					200					205				
cag	ccc	ctt	gtg	ggg	gcc	cag	agg	cgg	cgc	cga	gcc	gtg	ggg	ctg	gct	672
Gln	Pro	Leu	Val	Gly	Ala	Gln	Arg	Arg	Arg	Arg	Ala	Val	Gly	Leu	Ala	
	210					215					220					
gtg	gtg	acg	ctg	ctc	aat	ttc	ctg	gtg	tgc	ttc	gga	cct	tac	aac	gtg	720
Val	Val	Thr	Leu	Leu	Asn	Phe	Leu	Val	Cys	Phe	Gly	Pro	Tyr	Asn	Val	
225					230				235						240	
tcc	cac	ctg	gtg	ggg	tat	cac	cag	aga	aaa	agc	ccc	tgg	tgg	cgg	tca	768
Ser	His	Leu	Val	Gly	Tyr	His	Gln	Arg	Lys	Ser	Pro	Trp	Trp	Arg	Ser	
			245						250					255		
ata	gcc	gtg	gtg	ttc	agt	tca	ctc	aac	gcc	agt	ctg	gac	ccc	ctg	ctc	816
Ile	Ala	Val	Val	Phe	Ser	Ser	Leu	Asn	Ala	Ser	Leu	Asp	Pro	Leu	Leu	
			260					265					270			
ttc	tat	ttc	tct	tct	tca	gtg	gtg	cgc	agg	gca	ttt	ggg	aga	ggg	ctg	864
Phe	Tyr	Phe	Ser	Ser	Ser	Val	Val	Arg	Arg	Ala	Phe	Gly	Arg	Gly	Leu	
		275					280					285				
cag	gtg	ctg	cgg	aat	cag	ggc	tcc	tcc	ctg	ttg	gga	cgc	aga	ggc	aaa	912
Gln	Val	Leu	Arg	Asn	Gln	Gly	Ser	Ser	Leu	Leu	Gly	Arg	Arg	Gly	Lys	
	290					295					300					
gac	aca	gca	gag	ggg	aca	aat	gag	gac	agg	ggc	gtg	ggc	caa	gga	gaa	960
Asp	Thr	Ala	Glu	Gly	Thr	Asn	Glu	Asp	Arg	Gly	Val	Gly	Gln	Gly	Glu	
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<400> 15

Met Leu Pro Asp Trp Lys Ser Ser Leu Ile Leu Met Ala Tyr Ile Ile  
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Val Gly Arg Ile Arg Gln Pro Gln Pro Ala Pro Val His Ile Leu Leu  
35 40 45

Leu Ser Leu Thr Leu Ala Asp Leu Leu Leu Leu Leu Leu Pro Phe  
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Lys Ile Ile Glu Ala Ala Ser Asn Phe Arg Trp Tyr Leu Pro Lys Val  
65 70 75 80

Val Cys Ala Leu Thr Ser Phe Gly Phe Tyr Ser Ser Ile Tyr Cys Ser  
85 90 95

Thr Trp Leu Leu Ala Gly Ile Ser Ile Glu Arg Tyr Leu Gly Val Ala  
100 105 110

Phe Pro Val Gln Tyr Lys Leu Ser Arg Arg Pro Leu Tyr Gly Val Ile  
115 120 125

Ala Ala Leu Val Ala Trp Val Met Ser Phe Gly His Cys Thr Ile Val  
130 135 140

Ile Ile Val Gln Tyr Leu Asn Thr Thr Glu Gln Val Arg Ser Gly Asn  
145 150 155 160

Glu Ile Thr Cys Tyr Glu Asn Phe Thr Asp Asn Gln Leu Asp Val Val  
165 170 175

Leu Pro Val Arg Leu Glu Leu Cys Leu Val Leu Phe Phe Ile Pro Met  
180 185 190

Ala Val Thr Ile Phe Cys Tyr Trp Arg Phe Val Trp Ile Met Leu Ser  
195 200 205

Gln Pro Leu Val Gly Ala Gln Arg Arg Arg Arg Ala Val Gly Leu Ala  
210 215 220

Val Val Thr Leu Leu Asn Phe Leu Val Cys Phe Gly Pro Tyr Asn Val  
225 230 235 240

Ser His Leu Val Gly Tyr His Gln Arg Lys Ser Pro Trp Trp Arg Ser  
245 250 255

Ile Ala Val Val Phe Ser Ser Leu Asn Ala Ser Leu Asp Pro Leu Leu  
260 265 270

Phe Tyr Phe Ser Ser Ser Val Val Arg Arg Ala Phe Gly Arg Gly Leu  
275 280 285

Gln Val Leu Arg Asn Gln Gly Ser Ser Leu Leu Gly Arg Arg Gly Lys  
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Met Gly Asn Asp Ser Val Ser Tyr Glu Tyr Gly Asp Tyr  
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agc gac ctc tcg gac cgc cct gtg gac tgc ctg gat ggc gcc tgc ctg 158  
Ser Asp Leu Ser Asp Arg Pro Val Asp Cys Leu Asp Gly Ala Cys Leu  
15 20 25

gcc atc gac ccg ctg cgc gtg gcc ccg ctc cca ctg tat gcc gcc atc 206  
Ala Ile Asp Pro Leu Arg Val Ala Pro Leu Pro Leu Tyr Ala Ala Ile  
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ttc ctg gtg ggg gtg ccg ggc aat gcc atg gtg gcc tgg gtg gct ggg 254  
Phe Leu Val Gly Val Pro Gly Asn Ala Met Val Ala Trp Val Ala Gly

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Lys	Val	Ala	Arg	Arg	Arg	Val	Gly	Ala	Thr	Trp	Leu	Leu	His	Leu	Ala				
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gtg	gcg	gat	ttg	ctg	tgc	tgt	ttg	tct	ctg	ccc	atc	ctg	gca	gtg	ccc	350			
Val	Ala	Asp	Leu	Leu	Cys	Cys	Leu	Ser	Leu	Pro	Ile	Leu	Ala	Val	Pro				
				80					85					90					
att	gcc	cgt	gga	ggc	cac	tgg	ccg	tat	ggt	gca	gtg	ggc	tgt	cgg	gcg	398			
Ile	Ala	Arg	Gly	Gly	His	Trp	Pro	Tyr	Gly	Ala	Val	Gly	Cys	Arg	Ala				
				95					100					105					
ctg	ccc	tcc	atc	atc	ctg	ctg	acc	atg	tat	gcc	agc	gtc	ctg	ctc	ctg	446			
Leu	Pro	Ser	Ile	Ile	Leu	Leu	Thr	Met	Tyr	Ala	Ser	Val	Leu	Leu	Leu				
				110					115					120					
gca	gct	ctc	agt	gcc	gac	ctc	tgc	ttc	ctg	gct	ctc	ggg	cct	gcc	tgg	494			
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tgg	tct	acg	gtt	cag	cgg	gcg	tgc	ggg	gtg	cag	gtg	gcc	tgt	ggg	gca	542			
Trp	Ser	Thr	Val	Gln	Arg	Ala	Cys	Gly	Val	Gln	Val	Ala	Cys	Gly	Ala				
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gcc	tgg	aca	ctg	gcc	ttg	ctg	ctc	acc	gtg	ccc	tcc	gcc	atc	tac	cgc	590			
Ala	Trp	Thr	Leu	Ala	Leu	Leu	Leu	Thr	Val	Pro	Ser	Ala	Ile	Tyr	Arg				
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Arg	Leu	His	Gln	Glu	His	Phe	Pro	Ala	Arg	Leu	Gln	Cys	Val	Val	Asp				
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Tyr	Gly	Gly	Ser	Ser	Ser	Thr	Glu	Asn	Ala	Val	Thr	Ala	Ile	Arg	Phe				
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ctt	ttt	ggc	ttc	ctg	ggg	ccc	ctg	gtg	gcc	gtg	gcc	agc	tgc	cac	agt	734			
Leu	Phe	Gly	Phe	Leu	Gly	Pro	Leu	Val	Ala	Val	Ala	Ser	Cys	His	Ser				
				210					215					220					
gcc	ctc	ctg	tgc	tgg	gca	gcc	cga	cgc	tgc	cgg	ccg	ctg	ggc	aca	gcc	782			
Ala	Leu	Leu	Cys	Trp	Ala	Ala	Arg	Arg	Cys	Arg	Pro	Leu	Gly	Thr	Ala				
				225					230					235					
att	gtg	gtg	ggg	ttt	ttt	gtc	tgc	tgg	gca	ccc	tac	cac	ctg	ctg	ggg	830			
Ile	Val	Val	Gly	Phe	Phe	Val	Cys	Trp	Ala	Pro	Tyr	His	Leu	Leu	Gly				
				240					245					250					
ctg	gtg	ctc	act	gtg	gcg	gcc	ccg	aac	tcc	gca	ctc	ctg	gcc	agg	gcc	878			
Leu	Val	Leu	Thr	Val	Ala	Ala	Pro	Asn	Ser	Ala	Leu	Leu	Ala	Arg	Ala				
				255					260					265					
ctg	cgg	gct	gaa	ccc	ctc	atc	gtg	ggc	ctt	gcc	ctc	gct	cac	agc	tgc	926			
Leu	Arg	Ala	Glu	Pro	Leu	Ile	Val	Gly	Leu	Ala	Leu	Ala	His	Ser	Cys				
				270					275					280					
ctc	aat	ccc	atg	ctc	ttc	ctg	tat	ttt	ggg	agg	gct	caa	ctc	cgc	cgg	974			
Leu	Asn	Pro	Met	Leu	Phe	Leu	Tyr	Phe	Gly	Arg	Ala	Gln	Leu	Arg	Arg				
				290					295					300					

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gac gaa agt gtg gac agc aag aaa tcc acc agc cat gac ctg gtc tcg 1070  
Asp Glu Ser Val Asp Ser Lys Lys Ser Thr Ser His Asp Leu Val Ser  
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gag atg gag gtg tag gctggagaga cattgtgggt gtgtatcttc ttatctcatt 1125  
Glu Met Glu Val  
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tcacaagact ggcttcaggc atagctggat ccaggagctc aatgatgtct tcattttatt 1185

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<212> PRT  
<213> Homo sapiens

<400> 17

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Pro Leu Arg Val Ala Pro Leu Pro Leu Tyr Ala Ala Ile Phe Leu Val  
35 40 45

Gly Val Pro Gly Asn Ala Met Val Ala Trp Val Ala Gly Lys Val Ala  
50 55 60

Arg Arg Arg Val Gly Ala Thr Trp Leu Leu His Leu Ala Val Ala Asp  
65 70 75 80

Leu Leu Cys Cys Leu Ser Leu Pro Ile Leu Ala Val Pro Ile Ala Arg  
85 90 95

Gly Gly His Trp Pro Tyr Gly Ala Val Gly Cys Arg Ala Leu Pro Ser  
100 105 110

Ile Ile Leu Leu Thr Met Tyr Ala Ser Val Leu Leu Leu Ala Ala Leu  
115 120 125

Ser Ala Asp Leu Cys Phe Leu Ala Leu Gly Pro Ala Trp Trp Ser Thr  
130 135 140



Val Gln Arg Ala Cys Gly Val Gln Val Ala Cys Gly Ala Ala Trp Thr  
145 150 155 160

Leu Ala Leu Leu Leu Thr Val Pro Ser Ala Ile Tyr Arg Arg Leu His  
165 170 175

Gln Glu His Phe Pro Ala Arg Leu Gln Cys Val Val Asp Tyr Gly Gly  
180 185 190

Ser Ser Ser Thr Glu Asn Ala Val Thr Ala Ile Arg Phe Leu Phe Gly  
195 200 205

Phe Leu Gly Pro Leu Val Ala Val Ala Ser Cys His Ser Ala Leu Leu  
210 215 220

Cys Trp Ala Ala Arg Arg Cys Arg Pro Leu Gly Thr Ala Ile Val Val  
225 230 235 240

Gly Phe Phe Val Cys Trp Ala Pro Tyr His Leu Leu Gly Leu Val Leu  
245 250 255

Thr Val Ala Ala Pro Asn Ser Ala Leu Leu Ala Arg Ala Leu Arg Ala  
260 265 270

Glu Pro Leu Ile Val Gly Leu Ala Leu Ala His Ser Cys Leu Asn Pro  
275 280 285

Met Leu Phe Leu Tyr Phe Gly Arg Ala Gln Leu Arg Arg Ser Leu Pro  
290 295 300

Ala Ala Cys His Trp Ala Leu Arg Glu Ser Gln Gly Gln Asp Glu Ser  
305 310 315 320

Val Asp Ser Lys Lys Ser Thr Ser His Asp Leu Val Ser Glu Met Glu  
325 330 335

Val

<210> 18  
<211> 2858  
<212> DNA  
<213> Homo sapiens

<220>

<221> CDS

<222> (174)..(1175)

<400> 18

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tgttttcttt	tgtttgtata	tatgttttatt	ggtaacaggt	gacactggaa	gca atg	176		
					Met			
					1			
aac acc aca	gtg atg	caa ggc	ttc aac	aga tct	gag cgg	tgc ccc	aga	224
Asn Thr Thr	Val Met	Gln Gly	Phe Asn	Arg Ser	Glu Arg	Cys Pro	Arg	
	5		10			15		
gac act cgg	ata gta	cag ctg	gta ttc	cca gcc	ctc tac	aca gtg	gtt	272
Asp Thr Arg	Ile Val	Gln Leu	Val Phe	Pro Ala	Leu Tyr	Thr Val	Val	
	20		25		30			
ttc ttg acc	ggc atc	ctg ctg	aat act	ttg gct	ctg tgg	gtg ttt	gtt	320
Phe Leu Thr	Gly Ile	Leu Leu	Asn Thr	Leu Ala	Leu Trp	Val Phe	Val	
	35		40		45			
cac atc ccc	agc tcc	tcc acc	ttc atc	atc tac	ctc aaa	aac act	ttg	368
His Ile Pro	Ser Ser	Ser Thr	Phe Ile	Ile Tyr	Leu Lys	Asn Thr	Leu	
50		55		60			65	
gtg gcc gac	ttg ata	atg aca	ctc atg	ctt cct	ttc aaa	atc ctc	tct	416
Val Ala Asp	Leu Ile	Met Thr	Leu Met	Leu Pro	Phe Lys	Ile Leu	Ser	
	70		75			80		
gac tca cac	ctg gca	ccc tgg	cag ctc	aga gct	ttt gtg	tgt cgt	ttt	464
Asp Ser His	Leu Ala	Pro Trp	Gln Leu	Arg Ala	Phe Val	Cys Arg	Phe	
	85		90			95		
tct tcg gtg	ata ttt	tat gag	acc atg	tat gtg	ggc atc	gtg ctg	tta	512
Ser Ser Val	Ile Phe	Tyr Glu	Thr Met	Tyr Val	Gly Ile	Val Leu	Leu	
	100		105		110			
ggg ctc ata	gcc ttt	gac aga	ttc ctc	aag atc	atc aga	cct ttg	aga	560
Gly Leu Ile	Ala Phe	Asp Arg	Phe Leu	Lys Ile	Ile Arg	Pro Leu	Arg	
	115		120		125			
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Asn Ile Phe	Leu Lys	Lys Pro	Val Phe	Ala Lys	Thr Val	Ser Ile	Phe	
130		135		140			145	
atc tgg ttc	ttt ttg	ttc ttc	atc tcc	ctg cca	aat acg	atc ttg	agc	656
Ile Trp Phe	Phe Leu	Phe Phe	Ile Ser	Leu Pro	Asn Thr	Ile Leu	Ser	
	150		155			160		
aac aag gaa	gca aca	cca tcg	tct gtg	aaa aag	tgt gct	tcc tta	aag	704
Asn Lys Glu	Ala Thr	Pro Ser	Ser Val	Lys Lys	Cys Ala	Ser Leu	Lys	
	165		170			175		
ggg cct ctg	ggg ctg	aaa tgg	cat caa	atg gta	aat aac	ata tgc	cag	752
Gly Pro Leu	Gly Leu	Lys Trp	His Gln	Met Val	Asn Asn	Ile Cys	Gln	
	180		185		190			
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[illegible]

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tgttttaaat agaattgcta ttctcgatac atacaaagac gtaattgctg acccacaatc 2205  
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<210> 19  
<211> 333  
<212> PRT  
<213> Homo sapiens

<400> 19

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Arg Asp Thr Arg Ile Val Gln Leu Val Phe Pro Ala Leu Tyr Thr Val  
20 25 30

Val Phe Leu Thr Gly Ile Leu Leu Asn Thr Leu Ala Leu Trp Val Phe  
35 40 45

Val His Ile Pro Ser Ser Ser Thr Phe Ile Ile Tyr Leu Lys Asn Thr  
50 55 60

Leu Val Ala Asp Leu Ile Met Thr Leu Met Leu Pro Phe Lys Ile Leu  
65 70 75 80

Ser Asp Ser His Leu Ala Pro Trp Gln Leu Arg Ala Phe Val Cys Arg  
85 90 95

v

Phe	Ser	Ser	Val	Ile	Phe	Tyr	Glu	Thr	Met	Tyr	Val	Gly	Ile	Val	Leu
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Leu	Gly	Leu	Ile	Ala	Phe	Asp	Arg	Phe	Leu	Lys	Ile	Ile	Arg	Pro	Leu
		115					120					125			
Arg	Asn	Ile	Phe	Leu	Lys	Lys	Pro	Val	Phe	Ala	Lys	Thr	Val	Ser	Ile
	130					135					140				
Phe	Ile	Trp	Phe	Phe	Leu	Phe	Phe	Ile	Ser	Leu	Pro	Asn	Thr	Ile	Leu
145					150					155					160
Ser	Asn	Lys	Glu	Ala	Thr	Pro	Ser	Ser	Val	Lys	Lys	Cys	Ala	Ser	Leu
				165					170					175	
Lys	Gly	Pro	Leu	Gly	Leu	Lys	Trp	His	Gln	Met	Val	Asn	Asn	Ile	Cys
			180					185					190		
Gln	Phe	Ile	Phe	Trp	Thr	Val	Phe	Ile	Leu	Met	Leu	Val	Phe	Tyr	Val
		195					200					205			
Val	Ile	Ala	Lys	Lys	Val	Tyr	Asp	Ser	Tyr	Arg	Lys	Ser	Lys	Ser	Lys
	210					215					220				
Asp	Arg	Lys	Asn	Asn	Lys	Lys	Leu	Glu	Gly	Lys	Val	Phe	Val	Val	Val
225					230					235					240
Ala	Val	Phe	Phe	Val	Cys	Phe	Ala	Pro	Phe	His	Phe	Ala	Arg	Val	Pro
				245					250					255	
Tyr	Thr	His	Ser	Gln	Thr	Asn	Asn	Lys	Thr	Asp	Cys	Arg	Leu	Gln	Asn
			260					265					270		
Gln	Leu	Phe	Ile	Ala	Lys	Glu	Thr	Thr	Leu	Phe	Leu	Ala	Ala	Thr	Asn
		275					280					285			
Ile	Cys	Met	Asp	Pro	Leu	Ile	Tyr	Ile	Phe	Leu	Cys	Lys	Lys	Phe	Thr
	290					295					300				
Glu	Lys	Leu	Pro	Cys	Met	Gln	Gly	Arg	Lys	Thr	Thr	Ala	Ser	Ser	Gln
305					310					315					320
Glu	Asn	His	Ser	Ser	Gln	Thr	Asp	Asn	Ile	Thr	Leu	Gly			
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<210> 20  
<211> 878  
<212> DNA  
<213> Homo sapiens

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atctcttaaa tatgtggcaa actatttggtc caaagagatg tgggtccaaac ccgtcgaagg 180  
ctttataatt tgggtattaga taacaagggtg aacaaaactg acaataaata ctccaacgaa 240  
ttattttttta aaataactaag gggcaaaggc tattctaagg ggcaaaaacaa tctattactc 300  
agacctacct gaaaatttca cgtgaagtcg atcaaaagtt atacaaaatt ggtatttaca 360  
tgttttaaata ccggattggc atttttcttt aataataata catacaaaaa ctcagagggt 420  
taataaagaa ataattcaaa gtcctaataa gtcaacaaac agatttcatt ataagctgga 480  
acataaaaga gacaccatgg ttggctgtct cttttcaaaa attatcacgg ccacttggtc 540  
aaacgggaag cagcattcag aacaatgggt ctcaaatctc ggggtggcat aaacaccatg 600  
caggttggtt accacacaga ttcctgggccc tggtcccagt ctgaagctct cataaaggat 660  
ctgaggaatc tgcttcgtga caagattcag actatttatt tatttatcac ccaagctgga 720  
gtgcaggggt gcaacccggt caggaaacct cgctcggag taaaaggga accaaatcgg 780  
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<210> 21  
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<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (99)..(743)

<400> 21  
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Met Ala Ser His Glu Val  
1 5  
gat aat gca gag ctg ggg tca gcc tct gcc cat ggt acc cca ggc agt 164  
Asp Asn Ala Glu Leu Gly Ser Ala Ser Ala His Gly Thr Pro Gly Ser  
10 15 20  
gag acg gga cca gaa gag ctg aat act tct gtc tac cac ccc ata aat 212  
Glu Thr Gly Pro Glu Glu Leu Asn Thr Ser Val Tyr His Pro Ile Asn  
25 30 35

gga tca cca gat tat cag aaa gca aaa tta caa gtt ctt ggg gcc atc Gly Ser Pro Asp Tyr Gln Lys Ala Lys Leu Gln Val Leu Gly Ala Ile 40 45 50	260
cag atc ctg aat gca gca atg att ctg gct ttg ggt gtc ttt ctg ggt Gln Ile Leu Asn Ala Ala Met Ile Leu Ala Leu Gly Val Phe Leu Gly 55 60 65 70	308
tcc ttg caa tac cca tac cac ttc caa aag cac ttc ttt ttc ttc acc Ser Leu Gln Tyr Pro Tyr His Phe Gln Lys His Phe Phe Phe Phe Thr 75 80 85	356
ttc tac aca ggc tac ccg att tgg ggt gct gtg ttt ttc tgt agt tca Phe Tyr Thr Gly Tyr Pro Ile Trp Gly Ala Val Phe Phe Cys Ser Ser 90 95 100	404
gga acc ttg tct gtt gta gca ggg ata aaa ccc aca aga aca tgg ata Gly Thr Leu Ser Val Val Ala Gly Ile Lys Pro Thr Arg Thr Trp Ile 105 110 115	452
cag aac agt ttt gga atg aac att gcc agt gct aca att gca cta gtg Gln Asn Ser Phe Gly Met Asn Ile Ala Ser Ala Thr Ile Ala Leu Val 120 125 130	500
ggg act gct ttt ctc tca cta aat ata gca gtt aat atc cag tca tta Gly Thr Ala Phe Leu Ser Leu Asn Ile Ala Val Asn Ile Gln Ser Leu 135 140 145 150	548
agg agt tgt cac tct tca tca gag tca ccg gac cta tgc aat tac atg Arg Ser Cys His Ser Ser Ser Glu Ser Pro Asp Leu Cys Asn Tyr Met 155 160 165	596
ggc tcc ata tca aat ggc atg gtg tct cta ctg ctg att ctc acc ttg Gly Ser Ile Ser Asn Gly Met Val Ser Leu Leu Leu Ile Leu Thr Leu 170 175 180	644
ctg gaa tta tgc gta act atc tct acc ata gcc atg tgg tgc aat gca Leu Glu Leu Cys Val Thr Ile Ser Thr Ile Ala Met Trp Cys Asn Ala 185 190 195	692
aac tgc tgt aat tca aga gag gaa att tcc tca cct ccc aat tct gtg Asn Cys Cys Asn Ser Arg Glu Glu Ile Ser Ser Pro Pro Asn Ser Val 200 205 210	740
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ttaaatctcc agtgactcag agcttcaccc acaaactcag gagaacataa gcctgctcgt	853
aaagctcaat ccttctatca tggcaccaat cacaagaacc ttggacgttt gactgactct	913
atcctttctc tcctaactat aaatcctatt tgtgtgtcgt gggatatggaa ggacagatat	973
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cagaaattgg ttctattttct tcttatccac ctactccatt gctttatgag gtttaaggaa	1093
ggaaggcggt ataatcccta ttcaatatat tttttctaaa atccaacttc tgaccgcca	1153
gtaggaagaa aaatgagaca ttttttccat tacagagaaa tgcttcttga ctttaacatc	1213

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acacatgccc tgatatgtaa atgatgattt atgttggcga gtctgagagc aagcccaaat 1393
gtgttcttca aaggacaatg ggaaactgta aagtagagaa ctaaagaata aggccttttag 1453
aatctgacac atctgggttc aaattctgaa actgtcactt attacctgta tgaacatggg 1513
caaattatct aatctctctg atctatTTTT cctcatctgt aaaatagggtg taataataac 1573
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ccacaggtac ttg 1646

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<210> 22
<211> 214
<212> PRT
<213> Homo sapiens

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<400> 22

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Met Ala Ser His Glu Val Asp Asn Ala Glu Leu Gly Ser Ala Ser Ala
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His Gly Thr Pro Gly Ser Glu Thr Gly Pro Glu Glu Leu Asn Thr Ser
          20          25          30

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```

Val Tyr His Pro Ile Asn Gly Ser Pro Asp Tyr Gln Lys Ala Lys Leu
          35          40          45

```

```

Gln Val Leu Gly Ala Ile Gln Ile Leu Asn Ala Ala Met Ile Leu Ala
50          55          60

```

```

Leu Gly Val Phe Leu Gly Ser Leu Gln Tyr Pro Tyr His Phe Gln Lys
65          70          75          80

```

```

His Phe Phe Phe Phe Thr Phe Tyr Thr Gly Tyr Pro Ile Trp Gly Ala
          85          90          95

```

```

Val Phe Phe Cys Ser Ser Gly Thr Leu Ser Val Val Ala Gly Ile Lys
          100          105          110

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```

Pro Thr Arg Thr Trp Ile Gln Asn Ser Phe Gly Met Asn Ile Ala Ser
          115          120          125

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```

Ala Thr Ile Ala Leu Val Gly Thr Ala Phe Leu Ser Leu Asn Ile Ala
          130          135          140

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Val Asn Ile Gln Ser Leu Arg Ser Cys His Ser Ser Ser Glu Ser Pro

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[illegible]

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<210> 23
<211> 2481
<212> DNA
<213> Homo sapiens
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<220>
<221> CDS
<222> (179) .. (1276)
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gcac	ggcaga	gagt	ctgg	tg	gggt	ggagg	g	ctgg	gcct	gg	ccc	ctct	gtc	ctgt	ggaa	178
atg	ctg	ggg	caa	gtg	gtc	acc	ctc	ata	ctc	ctc	ctg	ctc	ctc	aag	gtg	226
Met	Leu	Gly	Gln	Val	Val	Thr	Leu	Ile	Leu	Leu	Leu	Leu	Leu	Lys	Val	
1				5				10						15		
tat	cag	ggc	aaa	gga	tgc	cag	gga	tca	gct	gac	cat	gtg	gtt	agc	atc	274
Tyr	Gln	Gly	Lys	Gly	Cys	Gln	Gly	Ser	Ala	Asp	His	Val	Val	Ser	Ile	
			20					25					30			
tcg	gga	gtg	cct	ctt	cag	tta	caa	cca	aac	agc	ata	cag	acg	aag	gtt	322
Ser	Gly	Val	Pro	Leu	Gln	Leu	Gln	Pro	Asn	Ser	Ile	Gln	Thr	Lys	Val	
		35					40					45				
gac	agc	att	gca	tgg	aag	aag	ttg	ctg	ccc	tca	caa	aat	gga	ttt	cat	370
Asp	Ser	Ile	Ala	Trp	Lys	Lys	Leu	Leu	Pro	Ser	Gln	Asn	Gly	Phe	His	
	50					55					60					
cac	ata	ttg	aag	tgg	gag	aat	ggc	tct	ttg	cct	tcc	aat	act	tcc	aat	418
His	Ile	Leu	Lys	Trp	Glu	Asn	Gly	Ser	Leu	Pro	Ser	Asn	Thr	Ser	Asn	
65					70					75					80	
gat	aga	ttc	agt	ttt	ata	gtc	aag	aac	ttg	agt	ctt	ctc	atc	aag	gca	466
Asp	Arg	Phe	Ser	Phe	Ile	Val	Lys	Asn	Leu	Ser	Leu	Leu	Ile	Lys	Ala	
				85					90					95		
gct	cag	cag	cag	gac	agt	ggc	ctc	tac	tgc	ctg	gag	gtc	acc	agt	ata	514

Ala	Gln	Gln	Gln	Asp	Ser	Gly	Leu	Tyr	Cys	Leu	Glu	Val	Thr	Ser	Ile	
			100					105					110			
tct	gga	aaa	ggt	cag	aca	gcc	acg	ttc	cag	ggt	ttt	gta	ttt	gat	aaa	562
Ser	Gly	Lys	Val	Gln	Thr	Ala	Thr	Phe	Gln	Val	Phe	Val	Phe	Asp	Lys	
		115					120				125					
ggt	gag	aaa	ccc	cgc	cta	cag	ggg	cag	ggg	aag	atc	ctg	gac	aga	ggg	610
Val	Glu	Lys	Pro	Arg	Leu	Gln	Gly	Gln	Gly	Lys	Ile	Leu	Asp	Arg	Gly	
	130					135					140					
aga	tgc	caa	gtg	gct	ctg	tct	tgc	ttg	gtc	tcc	agg	gat	ggc	aat	gtg	658
Arg	Cys	Gln	Val	Ala	Leu	Ser	Cys	Leu	Val	Ser	Arg	Asp	Gly	Asn	Val	
145					150					155					160	
tcc	tat	gct	tgg	tac	aga	ggg	agc	aag	ctg	atc	cag	aca	gca	ggg	aac	706
Ser	Tyr	Ala	Trp	Tyr	Arg	Gly	Ser	Lys	Leu	Ile	Gln	Thr	Ala	Gly	Asn	
				165					170					175		
ctc	acc	tac	ctg	gac	gag	gag	ggt	gac	att	aat	ggc	act	cac	aca	tat	754
Leu	Thr	Tyr	Leu	Asp	Glu	Glu	Val	Asp	Ile	Asn	Gly	Thr	His	Thr	Tyr	
			180					185					190			
acc	tgc	aat	gtc	agc	aat	cct	ggt	agc	tgg	gaa	agc	cac	acc	ctg	aat	802
Thr	Cys	Asn	Val	Ser	Asn	Pro	Val	Ser	Trp	Glu	Ser	His	Thr	Leu	Asn	
		195					200					205				
ctc	act	cag	gac	tgt	cag	aat	gcc	cat	cag	gaa	ttc	aga	ttt	tgg	cag	850
Leu	Thr	Gln	Asp	Cys	Gln	Asn	Ala	His	Gln	Glu	Phe	Arg	Phe	Trp	Pro	
	210					215					220					
ttt	ttg	gtg	atc	atc	gtg	att	cta	agc	gca	ctg	ttc	ctt	ggc	acc	ctt	898
Phe	Leu	Val	Ile	Ile	Val	Ile	Leu	Ser	Ala	Leu	Phe	Leu	Gly	Thr	Leu	
225					230					235					240	
gcc	tgc	ttc	tgt	gtg	tgg	agg	aga	aag	agg	aag	gag	aag	cag	tca	gag	946
Ala	Cys	Phe	Cys	Val	Trp	Arg	Arg	Lys	Arg	Lys	Glu	Lys	Gln	Ser	Glu	
				245					250				255			
acc	agt	ccc	aag	gaa	ttt	ttg	aca	att	tac	gaa	gat	gtc	aag	gat	ctg	994
Thr	Ser	Pro	Lys	Glu	Phe	Leu	Thr	Ile	Tyr	Glu	Asp	Val	Lys	Asp	Leu	
			260					265					270			
aaa	acc	agg	aga	aat	cac	gag	cag	gag	cag	act	ttt	cct	gga	ggg	ggg	1042
Lys	Thr	Arg	Arg	Asn	His	Glu	Gln	Glu	Gln	Thr	Phe	Pro	Gly	Gly	Gly	
		275					280					285				
agc	acc	atc	tac	tct	atg	atc	cag	tcc	cag	tct	tct	gct	ccc	acg	tca	1090
Ser	Thr	Ile	Tyr	Ser	Met	Ile	Gln	Ser	Gln	Ser	Ser	Ala	Pro	Thr	Ser	
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Gln Glu Pro Ala Tyr Thr Leu Tyr Ser Leu Ile Gln Pro Ser Arg Lys  
305 310 315 320

Ser Gly Ser Arg Lys Arg Asn His Ser Pro Ser Phe Asn Ser Thr Ile  
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cct aga gac tcc ggc ctc tat gct tgt act gcc agt agg act gta gac Pro Arg Asp Ser Gly Leu Tyr Ala Cys Thr Ala Ser Arg Thr Val Asp 100 105 110			934
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Val Tyr Val Ala Ala Pro Gly Glu Ser Leu Glu Val Arg Cys Leu Leu  
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Lys Asp Ala Ala Val Ile Ser Trp Thr Lys Asp Gly Val His Leu Gly  
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Pro Asn Asn Arg Thr Val Leu Ile Gly Glu Tyr Leu Gln Ile Lys Gly  
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Val Asp Ser Glu Thr Trp Tyr Phe Met Val Asn Val Thr Asp Ala Ile  
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<211> 860  
<212> PRT

<213> Homo sapiens

<400> 28

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Gln	Cys	Gln	Asp	Gly	Lys	Cys	Ile	Ser	Tyr	Lys	Trp	Val	Cys	Asp	Gly
		35					40					45			
Ser	Ala	Glu	Cys	Gln	Asp	Gly	Ser	Asp	Glu	Ser	Gln	Glu	Thr	Cys	Leu
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Ser	Val	Thr	Cys	Lys	Ser	Gly	Asp	Phe	Ser	Cys	Gly	Gly	Arg	Val	Asn
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Arg	Cys	Ile	Pro	Gln	Phe	Trp	Arg	Cys	Asp	Gly	Gln	Val	Asp	Cys	Asp
				85					90					95	
Asn	Gly	Ser	Asp	Glu	Gln	Gly	Cys	Pro	Pro	Lys	Thr	Cys	Ser	Gln	Asp
			100					105						110	
Glu	Phe	Arg	Cys	His	Asp	Gly	Lys	Cys	Ile	Ser	Arg	Gln	Phe	Val	Cys
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Asp	Ser	Asp	Arg	Asp	Cys	Leu	Asp	Gly	Ser	Asp	Glu	Ala	Ser	Cys	Pro
	130					135					140				
Val	Leu	Thr	Cys	Gly	Pro	Ala	Ser	Phe	Gln	Cys	Asn	Ser	Ser	Thr	Cys
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Ile	Pro	Gln	Leu	Trp	Ala	Cys	Asp	Asn	Asp	Pro	Asp	Cys	Glu	Asp	Gly
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Ser	Asp	Glu	Trp	Pro	Gln	Arg	Cys	Arg	Gly	Leu	Tyr	Val	Phe	Gln	Gly
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Asp	Ser	Ser	Pro	Cys	Ser	Ala	Phe	Glu	Phe	His	Cys	Leu	Ser	Gly	Glu
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Cys	Ile	His	Ser	Ser	Trp	Arg	Cys	Asp	Gly	Gly	Pro	Asp	Cys	Lys	Asp
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Lys	Ser	Asp	Glu	Glu	Asn	Cys	Ala	Val	Ala	Thr	Cys	Arg	Pro	Asp	Glu

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Phe	Gln	Cys	Ser	Asp	Gly	Asn	Cys	Ile	His	Gly	Ser	Arg	Gln	Cys	Asp
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Arg	Glu	Tyr	Asp	Cys	Lys	Asp	Met	Ser	Asp	Glu	Val	Gly	Cys	Val	Asn
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Val	Thr	Leu	Cys	Glu	Gly	Pro	Asn	Lys	Phe	Lys	Cys	His	Ser	Gly	Glu
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Cys	Ile	Thr	Leu	Asp	Lys	Val	Cys	Asn	Met	Ala	Arg	Asp	Cys	Arg	Asp
	290					295					300				
Trp	Ser	Asp	Glu	Pro	Ile	Lys	Glu	Cys	Gly	Thr	Asn	Glu	Cys	Leu	Asp
305					310					315					320
Asn	Asn	Gly	Gly	Cys	Ser	His	Val	Cys	Asn	Asp	Leu	Lys	Ile	Gly	Tyr
				325					330					335	
Glu	Cys	Leu	Cys	Pro	Asp	Gly	Phe	Gln	Leu	Val	Ala	Gln	Arg	Arg	Cys
			340					345					350		
Glu	Asp	Ile	Asp	Glu	Cys	Gln	Asp	Pro	Asp	Thr	Cys	Ser	Gln	Leu	Cys
		355					360					365			
Val	Asn	Leu	Glu	Gly	Gly	Tyr	Lys	Cys	Gln	Cys	Glu	Glu	Gly	Phe	Gln
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Leu	Asp	Pro	His	Thr	Lys	Ala	Cys	Lys	Ala	Val	Gly	Ser	Ile	Ala	Tyr
385					390					395					400
Leu	Phe	Phe	Thr	Asn	Arg	His	Glu	Val	Arg	Lys	Met	Thr	Leu	Asp	Arg
				405					410					415	
Ser	Glu	Tyr	Thr	Ser	Leu	Ile	Pro	Asn	Leu	Arg	Asn	Val	Val	Ala	Leu
			420					425					430		
Asp	Thr	Glu	Val	Ala	Ser	Asn	Arg	Ile	Tyr	Trp	Ser	Asp	Leu	Ser	Gln
		435					440					445			
Arg	Met	Ile	Cys	Ser	Thr	Gln	Leu	Asp	Arg	Ala	His	Gly	Val	Ser	Ser
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Tyr	Asp	Thr	Val	Ile	Ser	Arg	Asp	Ile	Gln	Ala	Pro	Asp	Gly	Leu	Ala
465					470					475					480

Val	Asp	Trp	Ile	His	Ser	Asn	Ile	Tyr	Trp	Thr	Asp	Ser	Val	Leu	Gly
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Thr	Val	Ser	Val	Ala	Asp	Thr	Lys	Gly	Val	Lys	Arg	Lys	Thr	Leu	Phe
			500					505					510		
Arg	Glu	Asn	Gly	Ser	Lys	Pro	Arg	Ala	Ile	Val	Val	Asp	Pro	Val	His
		515					520					525			
Gly	Phe	Met	Tyr	Trp	Thr	Asp	Trp	Gly	Thr	Pro	Ala	Lys	Ile	Lys	Lys
	530					535					540				
Gly	Gly	Leu	Asn	Gly	Val	Asp	Ile	Tyr	Ser	Leu	Val	Thr	Glu	Asn	Ile
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Gln	Trp	Pro	Asn	Gly	Ile	Thr	Leu	Asp	Leu	Leu	Ser	Gly	Arg	Leu	Tyr
				565					570					575	
Trp	Val	Asp	Ser	Lys	Leu	His	Ser	Ile	Ser	Ser	Ile	Asp	Val	Asn	Gly
			580					585					590		
Gly	Asn	Arg	Lys	Thr	Ile	Leu	Glu	Asp	Glu	Lys	Arg	Leu	Ala	His	Pro
		595					600					605			
Phe	Ser	Leu	Ala	Val	Phe	Glu	Asp	Lys	Val	Phe	Trp	Thr	Asp	Ile	Ile
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Asn	Glu	Ala	Ile	Phe	Ser	Ala	Asn	Arg	Leu	Thr	Gly	Ser	Asp	Val	Asn
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Leu	Leu	Ala	Glu	Asn	Leu	Leu	Ser	Pro	Glu	Asp	Met	Val	Leu	Phe	His
				645					650					655	
Asn	Leu	Thr	Gln	Pro	Arg	Gly	Val	Asn	Trp	Cys	Glu	Arg	Thr	Thr	Leu
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Ser	Asn	Gly	Gly	Cys	Gln	Tyr	Leu	Cys	Leu	Pro	Ala	Pro	Gln	Ile	Asn
		675					680					685			
Pro	His	Ser	Pro	Lys	Phe	Thr	Cys	Ala	Cys	Pro	Asp	Gly	Met	Leu	Leu
	690					695					700				
Ala	Arg	Asp	Met	Arg	Ser	Cys	Leu	Thr	Glu	Ala	Glu	Ala	Ala	Val	Ala
705					710					715					720

Thr Gln Glu Thr Ser Thr Val Arg Leu Lys Val Ser Ser Thr Ala Val  
725 730 735

Arg Thr Gln His Thr Thr Thr Arg Pro Val Pro Asp Thr Ser Arg Leu  
740 745 750

Pro Gly Ala Thr Pro Gly Leu Thr Thr Val Glu Ile Val Thr Met Ser  
755 760 765

His Gln Ala Leu Gly Asp Val Ala Gly Arg Gly Asn Glu Lys Lys Pro  
770 775 780

Ser Ser Val Arg Ala Leu Ser Ile Val Leu Pro Ile Val Leu Leu Val  
785 790 795 800

Phe Leu Cys Leu Gly Val Phe Leu Leu Trp Lys Asn Trp Arg Leu Lys  
805 810 815

Asn Ile Asn Ser Ile Asn Phe Asp Asn Pro Val Tyr Gln Lys Thr Thr  
820 825 830

Glu Asp Glu Val His Ile Cys His Asn Gln Asp Gly Tyr Ser Tyr Pro  
835 840 845

Ser Arg Gln Met Val Ser Leu Glu Asp Asp Val Ala  
850 855 860

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<211> 2070  
<212> DNA  
<213> Homo sapiens

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<212> DNA  
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<220>  
<221> CDS

<222> (88)..(1488)

<400> 30

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Met Thr Pro Ile Leu Thr Val Leu Ile	
1 5	
tgt ctc ggg ctg agt ctg ggc ccc agg acc cac gtg cag gca ggg cac	162
Cys Leu Gly Leu Ser Leu Gly Pro Arg Thr His Val Gln Ala Gly His	
10 15 20 25	
ctc ccc aag ccc acc ctc tgg gct gag cca ggc tct gtg atc atc cag	210
Leu Pro Lys Pro Thr Leu Trp Ala Glu Pro Gly Ser Val Ile Ile Gln	
30 35 40	
gga agt cct gtg acc ctc agg tgt cag ggg agc ctt cag gct gag gag	258
Gly Ser Pro Val Thr Leu Arg Cys Gln Gly Ser Leu Gln Ala Glu Glu	
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tac cat cta tat agg gaa aac aaa tca gca tcc tgg gtt aga cgg ata	306
Tyr His Leu Tyr Arg Glu Asn Lys Ser Ala Ser Trp Val Arg Arg Ile	
60 65 70	
caa gag cct ggg aag aat ggc cag ttc ccc atc cca tcc atc acc tgg	354
Gln Glu Pro Gly Lys Asn Gly Gln Phe Pro Ile Pro Ser Ile Thr Trp	
75 80 85	
gaa cac gca ggg cgg tat cac tgt cag tac tac agc cac aat cac tca	402
Glu His Ala Gly Arg Tyr His Cys Gln Tyr Tyr Ser His Asn His Ser	
90 95 100 105	
tca gag tac agt gac ccc ctg gag ctg gtg gtg aca gga gcc tac agc	450
Ser Glu Tyr Ser Asp Pro Leu Glu Leu Val Val Thr Gly Ala Tyr Ser	
110 115 120	
aaa ccc acc ctc tca gct ctg ccc agc cct gtg gtg acc tta gga ggg	498
Lys Pro Thr Leu Ser Ala Leu Pro Ser Pro Val Val Thr Leu Gly Gly	
125 130 135	
aac gtg acc ctc cag tgt gtc tca cag gtg gca ttt gac ggc ttc att	546
Asn Val Thr Leu Gln Cys Val Ser Gln Val Ala Phe Asp Gly Phe Ile	
140 145 150	
ctg tgt aag gaa gga gaa gat gaa cac cca caa cgc ctg aac tcc cat	594
Leu Cys Lys Glu Gly Glu Asp Glu His Pro Gln Arg Leu Asn Ser His	
155 160 165	
tcc cat gcc cgt ggg tgg tcc tgg gcc atc ttc tcc gtg ggc ccc gtg	642
Ser His Ala Arg Gly Trp Ser Trp Ala Ile Phe Ser Val Gly Pro Val	
170 175 180 185	
agc ccg agt cgc agg tgg tcg tac agg tgc tat gct tat gac tcg aac	690
Ser Pro Ser Arg Arg Trp Ser Tyr Arg Cys Tyr Ala Tyr Asp Ser Asn	
190 195 200	
tct ccc tat gtg tgg tct cta ccc agt gat ctc ctg gag ctc ctg gtc	738
Ser Pro Tyr Val Trp Ser Leu Pro Ser Asp Leu Leu Glu Leu Leu Val	
205 210 215	



cca	ggt	gtt	tct	aag	aag	cca	tca	ctc	tca	gtg	cag	cca	ggt	cct	atg	786
Pro	Gly	Val	Ser	Lys	Lys	Pro	Ser	Leu	Ser	Val	Gln	Pro	Gly	Pro	Met	
		220						225					230			
gtg	gcc	cct	ggg	gag	agc	ctg	acc	ctc	cag	tgt	gtc	tct	gat	gtc	ggc	834
Val	Ala	Pro	Gly	Glu	Ser	Leu	Thr	Leu	Gln	Cys	Val	Ser	Asp	Val	Gly	
	235						240				245					
tac	gac	aga	ttt	gtt	ctg	tat	aag	gag	gga	gaa	cgt	gac	ttc	ctc	cag	882
Tyr	Asp	Arg	Phe	Val	Leu	Tyr	Lys	Glu	Gly	Glu	Arg	Asp	Phe	Leu	Gln	
250					255					260					265	
cgc	cct	ggt	tgg	cag	ccc	cag	gct	ggg	ctc	tcc	cag	gcc	aac	ttc	acc	930
Arg	Pro	Gly	Trp	Gln	Pro	Gln	Ala	Gly	Leu	Ser	Gln	Ala	Asn	Phe	Thr	
				270					275					280		
ctg	ggc	cct	gtg	agc	ccc	tcc	cac	ggg	ggc	cag	tac	aga	tgc	tac	agt	978
Leu	Gly	Pro	Val	Ser	Pro	Ser	His	Gly	Gly	Gln	Tyr	Arg	Cys	Tyr	Ser	
			285					290					295			
gca	cac	aac	ctc	tcc	tcc	gag	tgg	tcg	gcc	ccc	agt	gac	ccc	ctg	gac	1026
Ala	His	Asn	Leu	Ser	Ser	Glu	Trp	Ser	Ala	Pro	Ser	Asp	Pro	Leu	Asp	
		300					305					310				
atc	ctg	atc	aca	gga	cag	ttc	tat	gac	aga	ccc	tct	ctc	tcg	gtg	cag	1074
Ile	Leu	Ile	Thr	Gly	Gln	Phe	Tyr	Asp	Arg	Pro	Ser	Leu	Ser	Val	Gln	
	315					320					325					
ccg	gtc	ccc	aca	gta	gcc	cca	gga	aag	aac	gtg	acc	ctg	ctg	tgt	cag	1122
Pro	Val	Pro	Thr	Val	Ala	Pro	Gly	Lys	Asn	Val	Thr	Leu	Leu	Cys	Gln	
330					335					340					345	
tca	cgg	ggg	cag	ttc	cac	act	ttc	ctt	ctg	acc	aag	gag	ggg	gca	ggc	1170
Ser	Arg	Gly	Gln	Phe	His	Thr	Phe	Leu	Leu	Thr	Lys	Glu	Gly	Ala	Gly	
				350					355					360		
cat	ccc	cca	ctg	cat	ctg	aga	tca	gag	cac	caa	gct	cag	cag	aac	cag	1218
His	Pro	Pro	Leu	His	Leu	Arg	Ser	Glu	His	Gln	Ala	Gln	Gln	Asn	Gln	
			365					370					375			
gct	gaa	ttc	cgc	atg	ggt	cct	gtg	acc	tca	gcc	cac	gtg	ggg	acc	tac	1266
Ala	Glu	Phe	Arg	Met	Gly	Pro	Val	Thr	Ser	Ala	His	Val	Gly	Thr	Tyr	
		380					385					390				
aga	tgc	tac	agc	tca	ctc	agc	tcc	aac	ccc	tac	ctg	ctg	tct	ctc	ccc	1314
Arg	Cys	Tyr	Ser	Ser	Leu	Ser	Ser	Asn	Pro	Tyr	Leu	Leu	Ser	Leu	Pro	
	395					400					405					
agt	gac	ccc	ctg	gag	ctc	gtg	gtc	tca	gca	tcc	cta	ggc	caa	cac	ccc	1362
Ser	Asp	Pro	Leu	Glu	Leu	Val	Val	Ser	Ala	Ser	Leu	Gly	Gln	His	Pro	
410					415					420					425	
cag	gat	tac	aca	gtg	gag	aat	ctc	atc	cgc	atg	ggt	gtg	gct	ggc	ttg	1410
Gln	Asp	Tyr	Thr	Val	Glu	Asn	Leu	Ile	Arg	Met	Gly	Val	Ala	Gly	Leu	
				430					435					440		
gtc	ctg	gtg	gtc	ctc	ggg	att	ctg	cta	ttt	gag	gct	cag	cac	agc	cag	1458
Val	Leu	Val	Val	Leu	Gly	Ile	Leu	Leu	Phe	Glu	Ala	Gln	His	Ser	Gln	
			445					450					455			
aga	agc	cta	caa	gat	gca	gcc	ggg	agg	tga	acagcagaga	ggacaatgca					1508

Arg Ser Leu Gln Asp Ala Ala Gly Arg  
460 465

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aatctaggac ctacattatc tggactgtat gctgggtcatt tctagagaca gcaatcaata 1628  
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<210> 31  
<211> 466  
<212> PRT  
<213> Homo sapiens

<400> 31

Met Thr Pro Ile Leu Thr Val Leu Ile Cys Leu Gly Leu Ser Leu Gly  
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Pro Arg Thr His Val Gln Ala Gly His Leu Pro Lys Pro Thr Leu Trp  
20 25 30

Ala Glu Pro Gly Ser Val Ile Ile Gln Gly Ser Pro Val Thr Leu Arg  
35 40 45

Cys Gln Gly Ser Leu Gln Ala Glu Glu Tyr His Leu Tyr Arg Glu Asn  
50 55 60

Lys Ser Ala Ser Trp Val Arg Arg Ile Gln Glu Pro Gly Lys Asn Gly  
65 70 75 80

Gln Phe Pro Ile Pro Ser Ile Thr Trp Glu His Ala Gly Arg Tyr His  
85 90 95

Cys Gln Tyr Tyr Ser His Asn His Ser Ser Glu Tyr Ser Asp Pro Leu  
100 105 110

Glu Leu Val Val Thr Gly Ala Tyr Ser Lys Pro Thr Leu Ser Ala Leu  
115 120 125

Pro Ser Pro Val Val Thr Leu Gly Gly Asn Val Thr Leu Gln Cys Val  
130 135 140

Ser Gln Val Ala Phe Asp Gly Phe Ile Leu Cys Lys Glu Gly Glu Asp  
145 150 155 160

Glu His Pro Gln Arg Leu Asn Ser His Ser His Ala Arg Gly Trp Ser  
165 170 175

Trp Ala Ile Phe Ser Val Gly Pro Val Ser Pro Ser Arg Arg Trp Ser  
180 185 190

Tyr Arg Cys Tyr Ala Tyr Asp Ser Asn Ser Pro Tyr Val Trp Ser Leu  
195 200 205

Pro Ser Asp Leu Leu Glu Leu Val Pro Gly Val Ser Lys Lys Pro  
210 215 220

Ser Leu Ser Val Gln Pro Gly Pro Met Val Ala Pro Gly Glu Ser Leu  
225 230 235 240

Thr Leu Gln Cys Val Ser Asp Val Gly Tyr Asp Arg Phe Val Leu Tyr  
245 250 255

Lys Glu Gly Glu Arg Asp Phe Leu Gln Arg Pro Gly Trp Gln Pro Gln  
260 265 270

Ala Gly Leu Ser Gln Ala Asn Phe Thr Leu Gly Pro Val Ser Pro Ser  
275 280 285

His Gly Gly Gln Tyr Arg Cys Tyr Ser Ala His Asn Leu Ser Ser Glu  
290 295 300

Trp Ser Ala Pro Ser Asp Pro Leu Asp Ile Leu Ile Thr Gly Gln Phe  
305 310 315 320

Tyr Asp Arg Pro Ser Leu Ser Val Gln Pro Val Pro Thr Val Ala Pro  
325 330 335

Gly Lys Asn Val Thr Leu Leu Cys Gln Ser Arg Gly Gln Phe His Thr  
340 345 350

Phe Leu Leu Thr Lys Glu Gly Ala Gly His Pro Pro Leu His Leu Arg  
355 360 365

Ser Glu His Gln Ala Gln Gln Asn Gln Ala Glu Phe Arg Met Gly Pro  
370 375 380

Val Thr Ser Ala His Val Gly Thr Tyr Arg Cys Tyr Ser Ser Leu Ser  
385 390 395 400

Ser Asn Pro Tyr Leu Leu Ser Leu Pro Ser Asp Pro Leu Glu Leu Val  
405 410 415

Val Ser Ala Ser Leu Gly Gln His Pro Gln Asp Tyr Thr Val Glu Asn  
420 425 430

Leu Ile Arg Met Gly Val Ala Gly Leu Val Leu Val Val Leu Gly Ile  
435 440 445

Leu Leu Phe Glu Ala Gln His Ser Gln Arg Ser Leu Gln Asp Ala Ala  
450 455 460

Gly Arg  
465